A SEMICONDUCTOR DEVICE HAVING AN ORGANIC ANTI-REFLECTIVE COATING (ARC) AND METHOD THEREFOR

Abstract of the Disclosure

In a making a semiconductor device, a patterning stack above a conductive material that is to be etched has a patterned photoresist layer that is used to pattern an underlying a tetraethyl-ortho-silicate (TEOS) layer. The TEOS layer is deposited at a lower temperature than is conventional. The low temperature TEOS layer is over an organic anti-reflective coating (ARC) that is over the conductive layer. The low temperature TEOS layer provides adhesion between the organic ARC and the photoresist, has low defectivity, operates as a hard mask, and serves as a phase shift layer that helps, in combination with the organic ARC, to reduce undesired reflection.